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(21)Application number : 05-285224 (71)Applicant : MITSUBISHI RAYON CO LTD
(22)Date of filing : 15.11.1993 (72)Inventor : YONEYAMA HIROAKI

(54) POROUS ELECTRODE BASE MATERIAL AND ITS MANUFACTURE

(57)Abstract:

PURPOSE: To utilize effectively electric conductivity in the width direction of carbon fiber, and provide a porous electrode base material excellent in thickness directional electric conductivity by making carbonaceous milled fiber having a prescribed fiber length exist in the vertical direction to the surface of the electrode base material in a matrix part of the electrode base material.

CONSTITUTION: Carbonaceous milled fiber is manufactured by pulverizing ordinary carbon fiber (containing graphite fiber), and though a fiber length is not more than 1.0mm, in this case, fiber not more than 0.1mm is particularly used. When the fiber length becomes longer than 0.1mm, inflow of a porous carbon fiber sheet-like material in the void is hindered. Here, resin solution or melting solution in which carbonaceous milled fiber having a fiber length of not more than 0.1mm and bulk density of 0.2 to 0.5g/cm³ is mixed by a prescribed quantity is injected into the void of the carbon fiber sheet-like material of a porous structure. Then, when the carbonaceous milled fiber is flowed in, shearing stress acts, and mixed solution or the like flows in abundantly from the vertical direction to a surface, and is arranged in the vertical direction to a surface of the sheet-like material. Thereby, thickness directional electric conductivity of an electrode base material is improved.

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